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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------|------------------|
| 10/626,565 | 07/25/2003 | Kei Hiruma | 116695 | 9343 |
| 25944 | 7590 | 10/23/2006 | EXAMINER | |
| OLIFF & BERRIDGE, PLC P.O. BOX 19928 ALEXANDRIA, VA 22320 | | | | NGUYEN, HOAN C |
| | | ART UNIT | | PAPER NUMBER |
| | | 2871 | | |

DATE MAILED: 10/23/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|----------------------------|---------------------|--|
| Office Action Summary | Application No. | Applicant(s) | |
| | 10/626,565 | HIRUMA ET AL. | |
| | Examiner HOAN C. NGUYEN | Art Unit 2871 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 24 July 2006.
- 2a) This action is **FINAL**. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-5 and 8-18 is/are pending in the application.
- 4a) Of the above claim(s) 6-11 and 18 is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-5 and 12-17 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____. | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| | 6) <input type="checkbox"/> Other: _____. |

DETAILED ACTION***Election/Restrictions***

Applicant's election of Group I in the reply filed on 7/27/2006 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Response to Amendment

Applicant's arguments with respect to new claims 11-16 based on the Response filed on 4/07/2006 have been considered but are moot in view of the new ground(s) of rejection. Therefore, this is Final action.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1-5 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Abe (US5511591A) in view of Mondin et al. (EP 994180 A1).

In regard to claims 1 and 3, Abe teaches (Figs. 7-10) a droplet discharge method for disposing liquid material in a specified quantity on a substrate (col. 2

lines 35-38), the discharge device comprising a nozzle 10 for discharging the liquid material in droplets, and the droplet discharge method comprising the steps of:

- cleaning the nozzle by discharging the liquid crystal from the nozzle;
- disposing the liquid crystal material on the substrate by discharging the liquid crystal material from the nozzle (the liquid crystal materials first pass nozzle can use for cleaning purpose. Since the dirty and clean liquid crystal materials have been used for injecting in display cell, therefore, the cleaning purpose is not needed or is inherent).

wherein

- the liquid crystal used in the cleaning step is disposed on the substrate, and the quantity of the liquid crystal material disposed on the substrate in the step of cleaning and the quantity of the liquid crystal disposed on the substrate in the step of disposing constitute the specified quantity or amount (col. 2 lines 29-38, **since the amount which is fitted with a dispenser holder in the liquid crystal filling apparatus is fixed, thus the liquid disposed on the substrate constitute the specified quantity**).

Claim 2:

- the liquid material is warmed to room temperature or higher (col. 5 line 62 to col. 6 line 2).

Claim 4:

- a sealing material for adhering the first substrate to a second substrate is arranged on the first substrate, and a specified quantity of liquid crystal is arranged on the first substrate, away from the sealing material (Figs. 8-10).

Claim 5:

- after the first substrate and the second substrate are adhered to each other via said sealing material, the liquid crystal is spread over a whole space between the first substrate and the second substrate (Figs. 8-10, col. 8 lines 43-46).

Claim 12:

- the nozzle is movable between a first position and a second position with respect to the substrate and the cleaning step is performed in the first position and the disposing the liquid material step is performed in the second position.

However, Abe fails to disclose the cleaning nozzle and substrate with liquid crystal.

Mondin et al. teach the liquid crystal material being used to clean for the removing oily and greasy soil (liquid crystal composition has an evidenced grease release effect, contains an anionic detergent, an ethoxylated glycerol type compound, a hydrocarbon ingredient, and water).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify a droplet discharge method for discharging a liquid material from a discharge device as Abe disclosed with the liquid crystal material being used to clean for the removing oily and greasy soil as taught by Mondin et al. (abstract).

2. Claims 1-5 and 12-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Hashinume et al. (US 20020062787A1)** in view of Mondin et al. (EP 994180 A1).

In regard to claims 1 and 3, **Hashinume et al.** teach (Figs. 7-9) a droplet discharge method for disposing liquid material in a specified quantity on a substrate, the discharge device comprising a nozzle 10 for discharging the liquid material in droplets, and the droplet discharge method comprising the steps of:

- cleaning the nozzle by discharging the liquid crystal from the nozzle;
- disposing the liquid crystal material on the substrate by discharging the liquid crystal material from the nozzle (the liquid crystal materials first pass nozzle can use for cleaning purpose. Since the dirty and clean liquid crystal materials have been used for injecting in display cell, therefore, the cleaning purpose is not needed or is inherent).

wherein

- the liquid crystal used in the cleaning step is disposed on the substrate, and the quantity of the liquid crystal material disposed on the substrate in the step of cleaning and the quantity of the liquid crystal disposed on the

substrate in the step of disposing constitute the specified quantity or amount with measuring weight device 54.

Claim 2:

- the liquid material is warmed to room temperature or higher with a temperature controller 60 of FIG. 8A.

Claim 4:

- a sealing material for adhering the first substrate to a second substrate is arranged on the first substrate, and a specified quantity of liquid crystal is arranged on the first substrate, away from the sealing material (Figs. 8-10).

Claim 5:

- after the first substrate and the second substrate are adhered to each other via said sealing material, the liquid crystal is spread over a whole space between the first substrate and the second substrate (Figs. 8-10, col. 8 lines 43-46).

Claim 12:

- the movement of dispenser 51 horizontally, thus the nozzle is movable between a first position and a second position with respect to the substrate and the cleaning step is performed in the first position and the disposing the liquid material step is performed in the second position.

Claim 13:

- measuring a weight of liquid material by measuring device 54.

However, **Hashinume et al.** fails to disclose the cleaning nozzle and substrate with liquid crystal.

Mondin et al. teach the liquid crystal material being used to clean for the removing oily and greasy soil (liquid crystal composition has an evidenced grease release effect, contains an anionic detergent, an ethoxylated glycerol type compound, a hydrocarbon ingredient, and water).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify a droplet discharge method for discharging a liquid material from a discharge device as **Hashinume et al.** disclosed with the liquid crystal material being used to clean for the removing oily and greasy soil as taught by Mondin et al. (abstract).

3. Claims 16-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Hashinume et al. (US 20020062787A1)** in view of Mondin et al. (EP 994180 A1) as applied to claims 1-5 and 12-13 and in further view of Arita et al. (US20030107632A1).

Hashinume et al. and Mondin fail to disclose step of measuring a weight of liquid material, that has been disposed on the substrate, controlled by discharging droplet of smaller size than a normal discharge size of the droplets.

Arita et al. teach measuring a weight of liquid material, that has been disposed on the substrate, controlled by discharging droplet of smaller size than a normal discharge size of the droplets (paragraphs 159, 232, 300, 346 and 363).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify a droplet discharge method for discharging a liquid material from a discharge device as **Hashinuma et al.** disclosed with measuring a weight of liquid material, that has been disposed on the substrate, controlled by discharging droplet of smaller size than a normal discharge size of the droplets for exhibiting excellent fixation of an ink, accurate print outs highly reliable may be obtained at any time without a support of complex recovery device as taught by Arita et al. (paragraph 32).

4. Claims 13 and 16-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Abe (US5511591A) in view of Mondin et al. (EP 994180 A1) as applied to claims 1-5 and 12 and in further view of Arita et al. (US20030107632A1).

Abe and Mondin fail to disclose step of measuring a weight of liquid material, that has been disposed on the substrate, controlled by discharging droplet of smaller size than a normal discharge size of the droplets.

Arita et al. teach measuring a weight of liquid material, that has been disposed on the substrate, controlled by discharging droplet of smaller size than a normal discharge size of the droplets (paragraphs 159, 232, 300, 346 and 363).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify a droplet discharge method for discharging a liquid material from a discharge device as Abe disclosed with measuring a weight of liquid material, that has been disposed on

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the substrate, controlled by discharging droplet of smaller size than a normal discharge size of the droplets for exhibiting excellent fixation of an ink, accurate print outs highly reliable may be obtained at any time without a support of complex recovery device as taught by Arita et al. (paragraph 32).

5. Claims 14-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Abe (US5511591A) in view of Mondin et al. (EP 994180 A1) as applied to claims 1-5 and 12 and in further view of Endo (US006565185B1).

Abe and Mondin fail to disclose the cleaning with flushing the liquid material through the nozzle to eliminate a clogging of nozzle.

Endo teaches the cleaning with flushing the liquid material through the nozzle to eliminate a clogging of nozzle.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify a droplet discharge method for discharging a liquid material from a discharge device as Abe disclosed with flushing the liquid material through the nozzle to eliminate a clogging of nozzle performing cleaning whenever a specific length of time has elapsed from a predetermined point in time as taught by Endo (col. 1 lines 34-35).

6. Claims 14-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hashinuma et al. (US 20020062787A1) in view of Mondin et al. (EP

994180 A1) as applied to claims 1-5 and 12 and in further view of Endo (US006565185B1).

Hashinume et al. and Mondin fail to disclose the cleaning with flushing the liquid material through the nozzle to eliminate a clogging of nozzle.

Endo teaches the cleaning with flushing the liquid material through the nozzle to eliminate a clogging of nozzle.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify a droplet discharge method for discharging a liquid material from a discharge device as **Hashinume et al.** disclosed with flushing the liquid material through the nozzle to eliminate a clogging of nozzle performing cleaning whenever a specific length of time has elapsed from a predetermined point in time as taught by Endo (col. 1 lines 34-35).

Conclusion

1. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory

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period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to HOAN C. NGUYEN whose telephone number is (571) 272-2296. The examiner can normally be reached on MONDAY-THURSDAY:8:00AM-4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Nelms can be reached on (571) 272-1787. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

HOAN C. NGUYEN
Examiner
Art Unit 2871

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ANDREW SCHECHTER
PRIMARY EXAMINER